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October 14, 2003

Ref: 8EPR-PS

To: Jim Christiansen, Remedial Project Manager
Libby Asbestos Site

From: Mary Goldade, Regional Superfund Chemist

Subject: Draft Response Action Work Plan – Review Comments

Attachment (1)

At your request, a review was performed of the *Draft Response Action Work Plan* (RAWP) *Libby Asbestos Project* (July 2003) prepared by CDM Federal Programs (CDM) and Volpe National Transportation Systems Center (Volpe).

My chemistry technical review comments are provided below. These comments are segregated into General and Specific and serve as my technical recommendations to you which I hope will be helpful when making management decisions about the planning documents and, ultimately, the site. Note that I had several questions that I should clarify with you. They are listed below. Based on the your overall project goals in answer to these questions, a few of my comments may need to be adjusted.

Overall Project Questions

1. Do you already have a process and/or procedure for decontamination water disposal? If so, this should be referenced in Section 5.2.4. If not, a recommendation should be discussed and inserted into the RAWP.

2. Is it your goal to clean soils at depth until no contamination (ND) is found? The DQOs are not clear on this important point. If the clearance point is less than 1%, then this document should indicate that it is meant for emergency removals only until or unless the removal action limits are redefined.

3. Are you aware that the RAWP calls for ISO 10312 counting protocols for TEM analyses of some air samples? They are stipulated for personal air samples that show hits above

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TWA or STEL. They are also listed on Tables 6-1 & 7-1, but their purpose is uncertain. The selection of ISO 10312 for some samples, but not others is ok providing we get the appropriate rationale documented within the RAWP.

4. Is dust sampling planned at anytime during the Interior Cleaning? The RAWP reference dust sampling protocols, but does not provide any details for when to sample.

5. Calculations recently performed by SRC indicate that we need to be counting several more GO in order to tell a change...since we are not interested in noting a change in concentrations, but rather documenting that there is not LA at a particular level, this should be clearly stated in the DQOs.

6.

General Comments

In general the RAWP is well-thought out and contains much of the necessary detail to complete removal actions. Comments for specific improvements are summarized in the next sections. The SAP (Appendix E) would be improved if additional information is provided to distinguish air sampling goals for clearance with goals for worker health monitoring during removal activities. Note that comments that have blue highlighting require completion by CDM.

1. Data Quality Objectives (DQOs), Appendix E. Every component of the DQO process is "filled in" in the SAP, however, some of the key information is left insufficiently answered or gives rationale as "as directed by EPA". Scientific justification (rationale) must be just that, scientific. As an example, I have provided a revised set of DQOs (Attachment A) for use the Draft RAWP Sampling and Analysis Plan (SAP). I would appreciate it you pass along to CDM that if, during DQO development in preparation of future SAPs, they find themselves wanting to write "as directed by EPA" or "because EPA said so", that they contact you and/or me to get down what the real rationale is.

2. Decontamination of equipment at disposal point. Procedures for how/when to decontaminate equipment (e.g., trucks) after disposing of contaminated material must appear in the RAWP, or if already available in another document, the document referenced within the RAWP.

3. Clearance Air Samples. All sections describing clearance air samples should specify whether the clearance is based upon any/all asbestos fiber minerals types or only Libby Amphibole.

4. PPE. PPE requirements are only specific for Attic VCI removal. Required PPE for all activities must be defined within the RAWP.

5. Clearance Air Samples...& DQOs what are the parameters for this.?

Specific Comments

1. RAWP, Section 1.3, 1st paragraph, last sentence. Please revise this sentence to read: "...the vermiculite from the Libby mine was contaminated with an exceedingly toxic form of naturally occurring asbestos, a solid solution series of asbestiform mineral fibers that includes tremolite, actinolite, winchite, and richterite. For convenience, this solid solution series is herein referred to as Libby Amphibole asbestos (LA)."

2. RAWP, Section 1.4, 2nd paragraph. This section identifies hard copy archival, but should also make mention of the group responsible for handling the electronic data entry and storage.

3. RAWP, Sections 2.2 & 2.3. These sections must include those responsible for managing, tracking and populating the electronic database, which database that is and where it resides.

4. RAWP, Section 2.3, last bullet. Add COCs (chain of custody forms) to the list. Indicate here that these will be electronic COCs (eCOCs) and provide detail in the SAP.

5. RAWP, Section 2. Multiple layers of subordinate contractors, who will be overseen by Volpe, are proposed in this plan. Additionally, an EPA ERRS contractor, who will not be overseen by Volpe, is proposed. Therefore, I believe that the entire team would benefit from an organization chart that lists the various entities, their management and lines of communication for both daily and QA activities. It is understood that many of these contractors may not yet be procured, therefore, a proposed version that is as accurate as possible, but leaves place holders for expected sub-contractors should be inserted into the revised RAWP. The organization chart should be updated just before work begins or as new procurements are made after work is started.

6. RAWP, Section 5.1. A blank copy of the Removal and Restoration Agreement form that is referenced in this section should be provided as part of the RAWP.

7. RAWP, Section 5.2, 1st paragraph, 3rd sentence. Append the following to the 3rd sentence: "...as outlined in the SAP (Appendix E)."

8. RAWP, Section 5.2.4. This section states: "Decontamination water will be collected and disposed of as directed by EPA." Instructions on decontamination water disposal must appear in the RAWP (See Question #1)

9. RAWP, Section 5.4.1, 2nd paragraph. This section states that if contamination is still present beyond the depths set forth in the previous paragraph (12 or 18 inches depending on use) additional soil removal will occur as directed by CDM. This seems appropriate,

however, is it your goal to clean soils at depth until no contamination (ND) is found? If not, it may be prudent to place a maximum excavation depth (perhaps 24-36 inches). If your goal is to clean to ND, this should be stated in the DQOs. (See also Question #2)

10. RAWP, Section 5.4.3, 4th sentence. The way this sentence is worded, it is unclear whether all truck hauling contaminated soil will be washed prior to leaving the site. Please clarify at what point(s) trucks leaving the removal site require decontamination.

11. RAWP, Section 5.5.1, 3rd sentence. Append this sentence with the following: "...with site-specific modifications detailed in applicable modification forms."

12. RAWP, Section 5.5.2, 7th sentence. Add the following: "...That is, if asbestos is reported above the respective TWA or excursion level for the appropriate sample then the sample will be confirmed by TEM as specified in the SAP (Appendix E)."

13. RAWP, Table in Section 5.5.2. The table must indicate the level of PPE worn when these samples were taken.

14. RAWP, Section 6.1, 3rd paragraph. Similar to Section 5.1, this section should indicate who will be responsible for providing the minutes that will be maintained in the CDM CIC residential file.

15. RAWP, Section 6.3.4. Indicate the analytical method that will be performed or simply refer to the SAP (Appendix E).

16. RAWP, Section 6.4.4. This section states that the wall area will be considered clean if "less than one structure is detected and if the result is non detect in living spaces." This is confusing as the wall is likely to be located within the living space. Please clarify. I suggest that the clearance requirement meet living space requirements (ND). Note that the SAP (Appendix E) must indicate the analytical sensitivity associated with an "ND" result.

17. RAWP, Section 6.5.2, 5th sentence. Add the following: "...That is, if asbestos is reported above the respective TWA or excursion level for the appropriate sample then the sample will be confirmed by TEM as specified in the SAP (Appendix E)."

18. RAWP, Table in Section 6.5.2. The table must indicate the level of PPE worn when these samples were taken.

19. RAWP, Section 7. If dust sampling needs to be cited, reference the Dust SAP rather than the dust sampling protocol indicated in the Pre-Design Investigation Work Plan. However, it is unclear from the process described here whether dust sampling is planned. (See Question #4)

20. RAWP, Section 7. This section states: "(cumulative LA asbestos concentration of the c, d, e and f fiber classes)". Reference to c, d, e, and f fiber classes is not commonly understood. Revise this statement to read: "(cumulative LA asbestos concentration for AHERA structures [fibers of length greater than or equal to 0.5 um and having an aspect ratio of 5:1 or greater.])"

21. RAWP, Section 7.1, last sentence. Indicate whether bedspreads will be included in the list of upholstery items.

22. RAWP, Section 7.2.2, 4th sentence. Add the following: "...That is, if asbestos is reported above the respective TWA or excursion level for the appropriate sample then the sample will be confirmed by TEM as specified in the SAP (Appendix E)."

23. RAWP, Table in Section 7.2.2. The table must indicate the level of PPE worn when these samples were taken.

24. RAWP, Section 8.1. Please define the expected inspections, particularly any of those that will include the resident's approval. For example, what is the difference between "pre-acceptance" and "final placement" inspections. Other inspections are indicated throughout this chapter. Last sentence: indicate that when cash credits are given they will be noted in the signed Removal and Restoration Agreement or a signed attachment to the agreement.

25. RAWP, Section 8.1, Backfill. A subsection that indicates where and how the backfill will be managed should be inserted. That is, procedures for testing, storing, and keeping the soil contaminant free are important components to this RAWP.

26. RAWP, Section 8.1.1. "Daily quality control" reports are mentioned in this subsection and other subsection in this chapter, but not in Section 9. I suggest that these are daily "end of day"or activity reports mentioned in Section 9. Please clarify.

27. RAWP, Section 8.1.2, last sentence. Has EPA received a copy of Specification 02200-Residential Earthwork? If not, this should be provided as an appendix to the RAWP. If so, then a reference to its location should be provided here.

28. RAWP, Section 8.1.3, 2nd sentence. Please remove the word "friable" from this sentence.

29. RAWP, Table 5-1. Please make the following corrections to the table:
    a. Revise Soil Header: "Minimum Volume (g)" to "Minimum Mass (g)"
    b. TWA Air Personal Samples, Minimum Volume. While it's true according to the 7400 method that a minimum of 25 L is called for, in order to achieve reasonable analytical sensitivity for TEM analyses, the goal should be a minimum of 400 L.

Revise the table accordingly.

c. Air Personal Samples, Laboratory Analytical Method. Add the "*" following NIOSH 7400.

d. Air Environmental Samples, Laboratory Analytical Method. Add the phrase ", with site-specific modifications" following AHERA.

e. * Footnote. Revise the reference NIOSH method number to be: 7400 and replace ISO 10312 with "AHERA, with site-specific modifications". (See Question #3)

f. Soil, Pre-Design, Laboratory Analytical Method. Revise as follows: "ISSI-LIBBY-01 Rev. 7 (preparation method) followed by SRC-LIBBY-03".

g. Number of samples. Include the minimum number of samples required per residence requiring soil removal.

30. RAWP, Table 6-1. Please make the following corrections to the table:

a. Air Personal Samples, Laboratory Analytical Method. Add the "*" following NIOSH 7400. Remove methods: NIOSH 7402 & ISO 10312. (See Question #3)

b. TWA Air Personal Samples, Minimum Volume. While it's true according to the 7400 method that a minimum of 25 L is called for, in order to achieve reasonable analytical sensitivity for TEM analyses, the goal should be a minimum of 400 L. Revise the table accordingly.

c. Air Environmental Samples, Laboratory Analytical Method. Add the phrase ", with site-specific modifications" following AHERA.

d. * Footnote. Revise the reference NIOSH method number to be: 7400 and replace ISO 10312 with "AHERA, with site-specific modifications". (See Question #3)

e. Define NAFU & NPE in the footnotes.

f. Number of samples. Include the minimum number of samples required per residence requiring soil removal.

31. RAWP, Table 7-1. Please make the following corrections to the table:

a. Air Personal Samples, Laboratory Analytical Method. Add the "*" following NIOSH 7400. Remove methods: NIOSH 7402 & ISO 10312. (See Question #3)

b. * Footnote. Revise the reference NIOSH method number to be: 7400 and replace ISO 10312 with "AHERA, with site-specific modifications". (See Question #3)

c. TWA Air Personal Samples, Minimum Volume. While it's true according to the 7400 method that a minimum of 25 L is called for, in order to achieve reasonable analytical sensitivity for TEM analyses, the goal should be a minimum of 400 L. Revise the table accordingly.

d. Number of samples. Include the minimum number of samples required per residence requiring soil removal.

32. RAWP, Appendix A SOPs.

a. Add the SOP for electronic Chain of Custody (eCOC).

b. Add the SOP for taking and managing digital and video photography.

c. Note that "Confirmation Soil Sampling Procedures" a site-specific cover to the

Surface Soil Sampling CDM SOP 1-3 provides decontamination procedures that have been used for the CSS program. Consider these procedures when outlining the overall decontamination requirements for the RAWP. (See Question #1)

33. RAWP, Appendix B. This section only provides 3 of several analytical methods proposed. All SOPs that are not available industry-wide must appear in the appendices.

34. RAWP, Appendix C. The Air Sampling Method that should be referenced is: EPA's SOP for Asbestos Sampling #2015. Please insert this document and revise the RAWP to indicate this. Also provide a site-specific cover to SOP #2015 that indicates which of the procedures listed will be used during implementation of the RAWP.

35. SAP, Section 1, 3rd paragraph, 4th sentence. Revise this sentence as follows: "The contaminated soil encountered at the properties is generally due to vermiculite placed..."

36. SAP, Section 1.1, 1st bullet. Revise this as follows: "..confirmation soil sampling to ensure what remains meets cleanup standards listed in the RAWP"

37. SAP, Section 1.1, Analytical Methods. Expand this list to include all proposed methods.

38. SAP, Section 2.2, 3rd sentence. Refine this sentence as follows: "...contains a solid solution series of amphibole asbestos fibers with compositions including..."

39. SAP, Section 2.2, page 2-2, last sentence. Revise this sentence as follows: "Plans for the work associated with OU3 will be addressed under separate cover."

40. SAP, Section 3.1.1, 1st paragraph, last sentence. Add a parenthetical reference to a Table that should be produced in Section 5 that lists the "criteria" (See DQOs, Attachment A).

41. SAP, Section 3.1.1, 2nd paragraph. There is insufficient information regarding the process for identification and sampling of confirmation soil sample location. As written, the SAP leaves all decision criteria for sampling and subsamples to the CDM onsite representative; however, it is unclear what criteria will be used and why. Guidelines for area requirements and sampling schemes that dictate whether soils will be subsamples for composites or grab sample locations (and supporting rationale for each) must be provided in the SAP. Additionally, guidelines for when grab samples (rather than composite samples) are appropriate must be provided. This not only allows for a more efficient means of training the samplers, but allows for clear and up-front documentation of the guidelines/process used for confirmation sampling.

42. SAP, Section 3.1.1, 3rd paragraph. The number of required blank samples (3) seems high and unnecessarily costly. Note that the statements made in this section directly conflict with requirements outlined in Section 3.2. Correct this discrepancy. For example, the

text may be revised to state: "In order to meet the analytical sensitivity requirements, the minimum requirements for final clearance air sampling include: 5 abatement area samples (inside exclusion zone) and 5 ambient samples (outside exclusion zone). In addition, 2 field blanks will be collected, one inside the exclusion zone and one outside the exclusion zone. The "sealed blank", more commonly referred to as a "lot blank", will not be collected at each residence. Rather, a lot blank will be collected, analyzed and declared free of asbestiform fibers prior to using any of the cassettes in that lot. For further information on the quality control samples required for this confirmation soil and air sampling, refer to Section 3.2."

43. SAP, Section 3.2. Revise this section to read as follows:

The QA/QC measures taken for confirmation soil and clearance air sampling include analysis of field and/or laboratory QC samples, verification of analytical results through alternative methods, and laboratory systems audits and performance monitoring through the National Voluntary Laboratory Accreditation Program. Laboratory QA/QC must adhere to method requirements unless defined differently in this SAP. At the discretion of the EPA onsite representative, data generated by polarized light microscopy (PLM) may be verified through alternative analytical methods, which are currently being developed by EPA in a performance evaluation study. If at any point this step is required, direction will be provided in the form of an addendum memorandum or modification form to this SAP.

Individual QA/QC requirements for each sample type are described below.

Confirmation Soil Sample QC
Individual QA/QC requirements for confirmation soil samples are:

Field Duplicates. Field duplicate samples are generally collected if information regarding the variability of co-located soil samples is required. As part of the Contaminant Screening Study (CDM ___), field duplicates were collected in order to understand the variability observed in field duplicate samples in Libby soil. For this reason and due to the need for expedited soil sample results, field duplicates are not required for the removal action program.

Performance Evaluation Samples. EPA is currently developing LA in soil performance evaluation (PE) samples for use at Libby. When the PE samples become available, these samples may be inserted into the confirmation soil sample train to independently assess analytical accuracy. If at any point this step is implemented, direction on required frequency, acceptance criteria, corrective action will be provided in the form of an addendum memorandum or modification form to this SAP.

Sample Preparation. Following receipt at the onsite analytical laboratory, soil confirmation samples will be thoroughly homogenized then split in accord with _____(reference the process or describe it fully here). One sample split will be analyzed by the onsite laboratory and

the other returned under strict chain of custody to CDM for archival at the CDM Close Support Facility in Denver.

Clearance (Confirmation) Air Sample QC

Individual QA/QC requirements for air samples taken as part of the clearance assessment are defined below and summarized in Table 3-__:

Lot Blanks. Lot blanks are prepared by submitting unused cassettes for analyses prior to putting the group (lot) of cassettes into use. Lot blanks will be collected and analyzed at a frequency of 2 per 100 cassettes from the same lot. The lot blanks will be analyzed by each of the following methods: NIOSH 7400 and TEM AHERA. Lot blanks will be identified on the chain of custody form so that the analytical laboratory is aware of their use and can contact the laboratory coordinator immediately, if asbestos fibers are detected on the filters. If the lot is proved to be contaminated with 2 or more fibers per cubic centimeter by NIOSH 7400, or 1 or more LA structures per square millimeter by TEM AHERA, then the lot of cassettes will be discarded and a new lot of cassettes will be used.

Field blanks should be divided into two categories, those relating to Clearance (confirmation) air samples and those relating to other air samples including breathing zone and perimeter monitoring. Regardless of the type of field blank, they are all collected by removing the cap from the sample cassette at the time of sampling for not more than 30 seconds and then replacing the cap.

Field Blanks, Clearance (Confirmation) Air Sample. For convenience these field blanks are termed: FB-C.

Field Blanks, Breathing Zone/Perimeter Monitoring Air Sample. For convenience these field blanks are termed: FB. Each field team will collect one FB per day of air sampling. The field blanks (FBs) will come from the same lot as the cassettes used that day for air sample collection. One FB per field team will be analyzed per week. The results of the

Table 3-___ - QC Sample Requirements for Clearance (Confirmation) Air Samples

QC Sample	Air Sample Type	Frequency	Acceptance Criteria	Corrective Action
Lot Blank	Clearance (Confirmation) ENDFIELD Breathing Zone ENDFIELD Perimeter Monitoring	2 per 100 cassettes of the same lot number[a]	1) Analyze & apply acceptance criteria prior to ever using the cassettes for sample collection. ENDFIELD 2) <2 f/cc (NIOSH 7400) ENDFIELD 3) <1 LA s/mm^2 (TEM AHERA)	Do not use the lot of cassettes if acceptance criteria are not met.
Field Blank	Clearance (Confirmation)	2 per exclusion zone at the		
	Breathing Zone ENDFIELD Perimeter Monitoring	1 per field team per day of air sampling		

f/cc - fibers per cubic centimeter
LA s/mm2 - Libby Amphibole structures per square millimeter

a - Frequency requirements are based on the lot number, not on the air sample type.

44.

45. SAP. QA samples. This section should specifically state that QC samples will not be used in decision making, but rather only to assess the precision and accuracy of the field sampling and analysis efforts.

46. QC samples ..Lot/field blank

Attachment A

Data Quality Objectives for RAWP SAP (Appendix E)